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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,049	10/18/2005	Siyuan Yu	2490-21	6785
23117 7590 09/19/2007 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EXAMINER RODRIGUEZ, ARMANDO	
			ART UNIT 2828	PAPER NUMBER
			MAIL DATE 09/19/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/524,049

Applicant(s)

YU, SIYUAN

Examiner

ARMANDO RODRIGUEZ

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) 22-28 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2-8-05, 3-10-05, 3-24-05.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 18 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 18,

Claim 1 does not define a tunable lasing device.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 15, 18-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Ksendzov (PN 6,856,641).

Regarding claims 1, 19, 20,

Figure 7 illustrates a schematic of a ring resonator semiconductor laser, including a ring cavity (700), coupling means (2), and a frequency selection means (Bragg grating), which provides feedback and is not part of the ring cavity. Column 8 lines 44-

58 discloses using a heater to match the reflection band of the grating with one of the resonator peaks.

Regarding claim 2,

Figure 7, illustrates a frequency selection means (Bragg grating).

Regarding claim 3,

Figure 7 illustrates a ring shape waveguide.

Regarding claim 4,

Figure illustrates a waveguide output coupler (2).

Regarding claim 15, 21,

Column 8 lines 52-55 discloses thermal tuning the grating, which will control the refractive index.

Regarding claim 18,

Column 4 lines 35-37 discloses the ring resonator semiconductor laser used in communications.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-14, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ksendzov (PN 6,856,641) in view of Deacon (PN 6,324,204).

Regarding claim 5,

Ksendzov illustrates in figure 7 an optical gain element (gain chip).

Ksendzov is silent as to the optical gain element forms part or all of the ring cavity.

However, Deacon discloses disposing an optical gain element (910) as part of the ring cavity and in accordance with MPEP 2144.04 C Rearrangement of parts, the court has held rearrangement of parts that do not modify the operation of the device as unpatentable. In the present application having the optical gain element at the end of the waveguide as in Ksendzov or as part of the ring cavity as in Deacon will not modify the operation device because the optical gain element will provide the same function of amplification regardless of its position within the waveguides.

Regarding claim 6,

Ksendzov illustrates in figure 4 a semiconductor optical gain element.

Regarding claim 7,

Figure 7 of Ksendzov illustrates the waveguide coupler (2) as bi-directional.

Regarding claims 8, 10, 11, 12,

Figures 1, 4 and 7 of Ksendzov illustrates the semiconductor layers of frequency selection means and the optical gain element, figures 1 and 7 illustrates the corrugation of the frequency selection means.

Regarding claims 9, 13,

Figure 4 of Ksendzov illustrates the lasing device as monolithically integrated on a substrate.

Regarding claim 14,

Figure 4 of Ksendzov illustrates a silicon substrate, which are transparent.

Regarding claim 16,

Controlling the refractive index by current (carrier injection) is notoriously well known in the art.

Regarding claim 17,

Ksendzov discloses in column 8 lines 44-46 matching the reflection band of the grating with the resonator peaks.

Allowable Subject Matter

Claims 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 23-28 depend from claim 22.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARMANDO RODRIGUEZ whose telephone number is 571-272-1952. The examiner can normally be reached on 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2828

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


ARMANDO RODRIGUEZ
Primary Examiner
Art Unit 2828

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